

2012 MONDEO ROD SPECIFICATIONS

VIOLATIONS

When referring to the engine, gearbox, differential, mechanical or construction, rules and regulations the principle will always be: Unless permission is specifically granted to make modifications, or any variation, nothing may be done to alter or change in any way the standard Parts. Unless these rules state you can do it, you **CANNOT DO IT**.

Cars, Engines and Fuel will be checked on a random basis. Violations will result in an immediate suspension of all racing facilities and any refusal will also result in an immediate suspension.

Drivers are reminded that scrutineer checks can be carried out at any time, and most certainly at official championships. If parts are suspected of being illegal make sure you leave them with the promotion if you do not agree. If you refuse it will automatically make the parts illegal. **It is the responsibility of the driver to prove to the promotion that the part is legal by the way of written proof of where the part originated. This must be done within seven days, otherwise the part(s) in question will be deemed to be illegal and will result in immediate suspension from racing and referral for disciplinary action.**

1. CARS

Only right hand drive Ford Mondeo hatchback or saloon cars are permitted. Only one driver per car and one car per driver is permitted at each meeting.

2. ENGINE

Only the Ford 1.6/1.8/2.0 Silvertop Zetec engines are permitted

The Zetec ST170 with VVT (Variable Valve Timing) is not permitted

- a) Maximum Nominal bore size 84.8mm with a Standard stroke of 88.0mm (a maximum bore oversize of 1mm is allowed for reconditioning engine blocks)
- b) Pistons must not be skimmed or modified in any way. A standard crankshaft must be used.
- c) No Balancing or lightening of crankshaft, conrods, or pistons.
- d) Only standard pistons, no forged or competition pistons permitted.
- e) Camshafts must remain standard ford Zetec (**Cam Measurements TBC**), No vernier cam wheels, Only standard ford zetec valve springs must be used.
- f) Only Standard Zetec **cylinder heads** permitted which may be skimmed. Valves must remain standard and of standard Ford Zetec length (**Valve Measurements TBC**). Valve seats must remain standard.

No gas flowing, adding or removal of material to the ports or combustion chamber. Replacement valve guides may be used but must use original position. Bronze valve guides are not permitted and must be standard.

- g) Flywheel and Clutch: Any Zetec flywheel and clutch may be used in standard form, NO SKIMMING OR DRILLING PERMITTED.

- h) No competition gaskets allowed. Standard Ford Gaskets or equivalent only.

- i) Ignition System: Any ford or aftermarket system may be used and must be ignition only.

- j) Engine Mounts: Engine mounting brackets must remain standard, The engine must occupy its original position. The charging system and power steering pumps may be removed, fan belts are free.

No other modifications are allowed. Standard Mondeo sumps only. No outside alterations may be made (**sump guards are permitted**)

- k) No Oil coolers, oil system must remain standard.

- l) The engine must be fitted with a metal catch tank of 1 litre minimum capacity. It must have a minimum of 2 breather pipes connected to it, one from the rocker box and one from the crankcase. NO drinks bottles allowed.

- m) No turbos, no fuel injection, no forced induction of any kind.

- n) The exhaust manifold must be in standard form and standard to the Zetec engine.

- o) Inlet Manifolds must be of steel or aluminum construction to accept the 32/36 DGV/DGAV Weber carburetor.(no manifolds to be constructed to fit twin carbs) Manifolds may be purchased from

www.usherengineering.co.uk .

- p) Radiators are free.

All engine parts not mentioned above must remain standard.

3. EXHAUST SYSTEM

The standard exhaust system may be retained but must end at the end of the centre tunnel, The front downpipe must remain standard but the front downpipe can only be modified at the tail end to allow the exhaust to run through the car, If exhaust systems pass through the car they must be covered. If a silencer becomes ineffective during racing or practice, the car will be withdrawn from the event. Exhaust must terminate through the floor and must not terminate through the side of the car.

4. CARBURETTOR

Only the standard Weber 32/36 DGV or DGVA carburetor may be used **with a maximum of 26mm and a 27mm sized chokes. No polishing or re-profiling is allowed.** No modifications to the carburetor body or original design. All gaskets must remain standard and original. Main jets, primary and secondary jets, auxiliary venturi and emulsion tubes may be changed but must face downwards towards the butterflies. Accelerator pump jets may be changed but face downwards towards butterflies. Chokes must not be modified to open together, Cold starting devices may be removed with retaining lugs and subsequent holes blanked off. Air and fuel galleries may not be enlarged or modified, and fuel may enter on either side. Floats may not be modified or weighted, and must control the fuel flow. Needle valves must be standard, and not enlarged or modified. No trumpets are allowed. It is permitted to use a grub screw or similar device to fix the auxiliary carburetor to the carburetor or body. Top end enrichment devices may not be blanked off or modified. A secondary fixing on the fuel inlet feed line is required. No material may be added or removed from the gas flow area, it must be as standard.

5. GEARBOX & DIFFERENTIALS

Must be standard to the range as fitted by the manufacturer, No competition type gearboxes allowed. Differential ratios must be standard Ford Ratios and not locked. No limited slip differentials.

6. FRONT SUSPENSION

Must be any standard Ford Mondeo parts. Negative camber only to a maximum 60mm tolerance (if you have 50mm negative camber you can pull the leg 10mm forward). Positive camber on the o/s front wheel is not allowed. The springs must be standard Ford Mondeo and may be lowered by cutting **ONLY**. All suspension parts must be located by original mounting points on the chassis and body, front and rear subframes must occupy their original standard positions.

7. REAR SUSPENSION

The components are to be standard & original in length. No adjustable parts or modifications are allowed. Only standard bushes are permitted, no competition parts. Suspension may be lowered by cutting the standard Mondeo springs. No Negative or Positive cambering allowed.

8. STEERING

The Steering rack must occupy its original position, racks maybe P.A.S or dry. And must be in standard form except for lengthening the n/s for the negative camber.

The steering column height may be adjusted & reinforced at the top bracket. A quick release steering wheel is recommended.

9. WHEELS AND TYRES

Any steel or alloy wheel can be used to a maximum of 6j. (NO AFTER MARKET ALLOY WHEELS) Wheel studs are free. No wheel spacers allowed, whether welded to the wheel or not, unless fitted as standard. The only tyre permitted is the Kingpin Remould Radial 185/60/14 and the Valour 185/65/14. **Technic Remoulds made by Kingpin are also permitted.** Tyre gaiters are not permitted. No alteration can be made to the original tread pattern by tyre cutting. NO MUD AND SNOW TYRES PERMITTED

10. BRAKES

To be original and to work on all wheels. Handbrake is compulsory. No biased braking. No ABS, no 4x4 parts allowed. Brake pipes may be allowed to pass through the car. The use of competition brake pads and pipes is not permitted.

11. BODYWORK

To remain standard including floor pan with removal of inner door panels permitted but any removal of structural stiffeners is not permitted. **The bulkhead must be sealed off to act as a full firewall.** No holes are allowed in any panel, other than original. No armouring whatsoever. All doors must be fixed closed when racing. No spoilers or aerofoils unless

fitted as standard to the range of car. No roof pods or fins. Grilles must remain in their original position or removed. Front and rear light apertures may be blanked using a maximum thickness of 2mm Aluminum and must not overlap apertures by more than 25mm. Headlamps may be blanked on the front or back of the apertures. All flammable material must be removed. Any replacement dashboards for gauges etc. must be made of aluminum. No sharp edges to bodywork. A metal upright $\frac{3}{4}$ " x $\frac{3}{4}$ " must be welded or bolted into the windscreen aperture, one third of the way along the driver's side. Original bumpers may be replaced with bumpers from other models but must keep the saloon car shape and must be of a smart appearance.

All fixing bolts must be the coach bolt type with the head of the bolt facing outwards. No foam filled panels are allowed. Fabricated doors are allowed, but must be of professional appearance, the maximum thickness of steel sheet used must be 1mm. There must be no overlapping and should be no thicker than original. The circular area of the spare wheel carrier may be removed, You may not remove any other sections of the boot floor.

12. ROLL CAGES

The minimum requirement is a four post roll cage with down bars in support of the A & B posts, constructed from mild steel members, minimum size of 32mm x 32mm x 3mm, **or 38mm x 38mm x 3mm box or tube**, all securely welded at all joints as shown and must include the following.

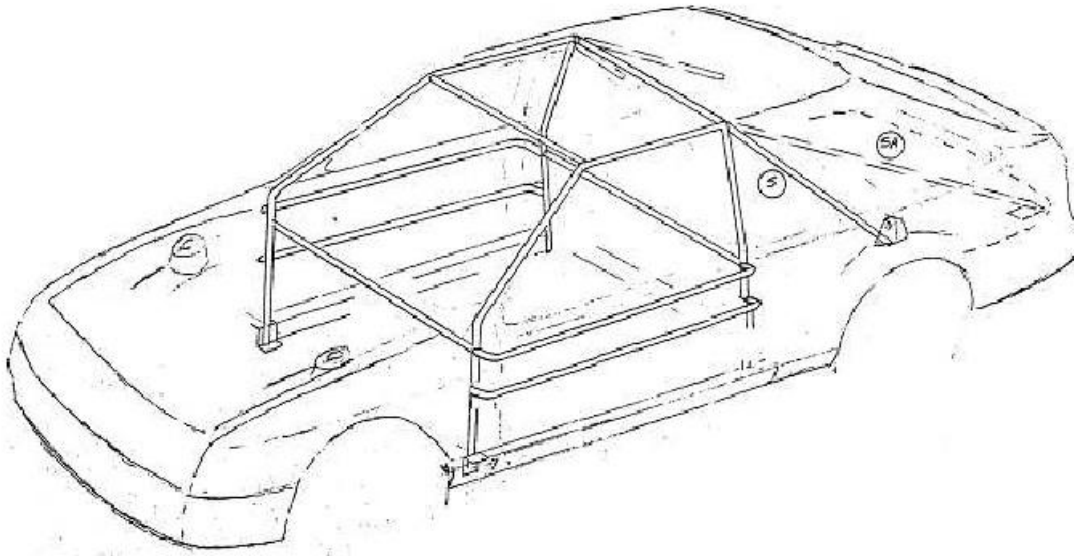
1. A 230 mm square plate, minimum 3mm thick, welded between the base of the uprights and the floor for additional strength
2. One horizontal bar between A Posts (at dashboard level)
3. One horizontal bar between B posts at approximately mid height and adapted to form support to the seat / seat headrest or a seat hoop.
4. Two "chicken" bars in the drivers door aperture and **two in the passenger door aperture**. Chicken bars to fit between A & B post support down bars and no further. **Bars that lay on the sills will not be classed as chicken bars.**
5. Two down bars, one each side from the roll cage top, to either, the rear suspension turret (5) or (5A) into the boot well, terminating 100mm short of the back panel.

The following members may be added (to the same material specification as the roll cage) :

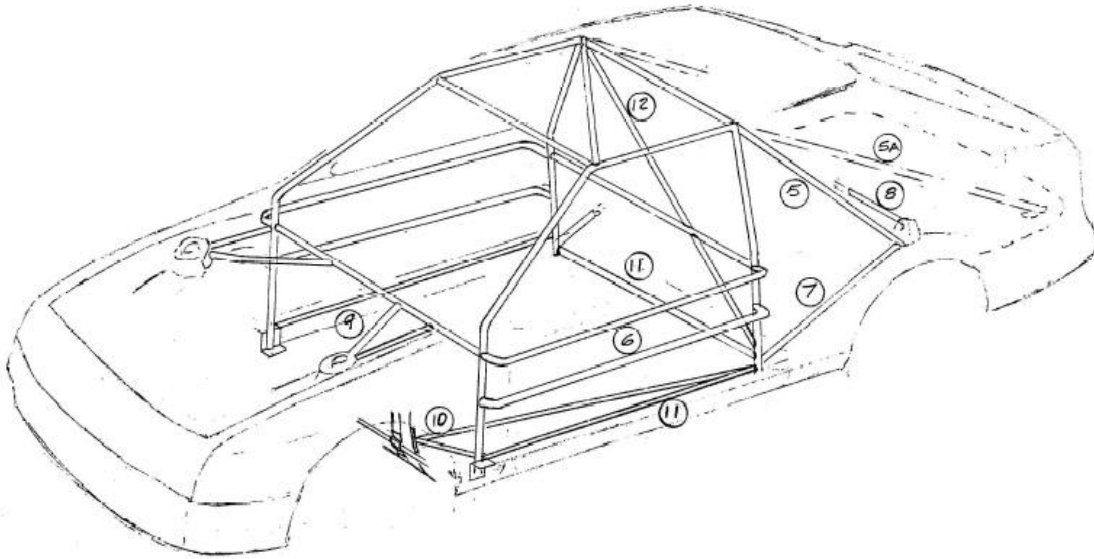
6. Two bars, one each side, from the B post down bar base, rearward to the suspension turret.

ROLL CAGE DIAGRAMS

MINIMUM SPECIFICATION ROLL CAGE



MAXIMUM SPECIFICATION ROLL CAGE



7. A cross bar fitted across the rear suspension turrets, this may be cranked and welded to the floor panel in a central location.
8. Members may be positioned from the roll cage, forward through the bulkhead and connected to the front suspension turrets. Members must be within the engine bay aperture and horizontal (within practical limits)
9. A centre bar , diagonal or cross must be in the roof area to protect driver from impact if car is on its side.
10. One horizontal bar each side between A & B post support down bars at sill height and between B posts (to protect legs/feet in a side impact situation).
11. One diagonal member between either B post support uprights or rearward members described in (5)

Further Notes

No suspension components may be fixed directly to roll cage / support members.
All members must be positioned within the body lines and fitted as supports/protection NOT armouring.
No other members must be added as the list above describes the full limit of roll cage construction that is allowed.

Please refer to the roll cage diagrams which illustrate the minimum required and the maximum allowed.

13. SCREEN

All glass must be removed. Front screen must have a central bar of 19mm x19mm or 3/4" x 3/4" SHS welded in place.

An interior mirror must be fitted. A drivers door mirror must be fitted, mounted in such a position that it does not project further out than the body. (Must not be able to get knocked off whilst in racing traffic)

14. STOP LIGHTS

Either two stop/brake lights or one single stop/brake strip-light must be fitted facing rearwards. If two lights, they must be a minimum of 30 inches (762 mm) apart. Lamp(s) must be operated by the

standard stop light switch as fitted to the particular model of car. No other switches or modifications to switches to be made. Bulbs to be of 21 watt intensity. For round type lamps: minimum diameter 3" (76mm), maximum diameter 5" (127mm). For square/rectangular type lamps: minimum 3" (76mm) square, maximum 5" (127mm) square. For strip type lamps, minimum of 8" (203mm), maximum of 16" (406mm) width and should be fitted securely to allow a clear view from the rear. All bulbs must be working.

15. SEATS

You must have a Competition type Driving Seat with a head restraint.

The seat should occupy its original position where possible and be suitably supported at shoulder height and on both of the sides and back, with a suitable framework or seat stiffener's. (see Figure 2)

16. BATTERIES & ELECTRICAL

May be brought inside the car, but the floor must not be cut to accommodate the battery. They must be firmly fixed and covered with a material which will not rot due to acid contamination. Contact between the safety harness and batteries must not be possible. Batteries must be a minimum of 6" (152mm) from fuel tank. An electrical cut off switch must be fitted to the R/N/S corner of the car.

17. NUMBERS

The driver's racing number must appear on the doors of the car. They should be preferably in large American style numbers on a contrasting background. The bigger the better. You should also paint your number in black on white or white on black in the rear corner of your roof to assist with lap scoring at tracks with race controls that are located in a high position. A 'Sun Visor' made of metal and having a depth of at least 6" must be fitted to the top of the windscreen aperture when no laminated glass or perspex is fitted. The drivers name only must appear across the sun visor position. All signwriting must have a professional appearance.

Scrutineers will instruct drivers to change their numbers if lap scorers find it difficult to read them. The whole of the roof of the car (with the exception of number triangle) must be painted in the drivers current grade colour.

18 FUEL SYSTEM

Fuel tanks must be metal or FIA approved with a maximum capacity of 4 gallons or less are permitted. These must be fitted rear of the driver but in front of the rear axle centre line, i.e. they are no longer allowed to be fitted in the boot area. They **MUST NOT BE FITTED BELOW THE CHASSIS RAILS** of the car, and the floor must not be cut in any way to accept the tank. All tank filler caps must be of a secure leak proof metal or screw fitting. Petrol pipes must be of metal or metal covered and have a shut off tap within easy reach of the driver. All tanks must be fitted with a breather system which prevents spillage if a car is inverted. The fuel tank must be a minimum of 6" (152mm) from the battery. All petrol pick up pipes must draw through a stand pipe from the top of the fuel tank. Four 2" holes must be drilled at the lowest point under tanks to allow spilled petrol to drain. A firewall between fuel tank including filler cap/pump and driver must be fitted. Fuel regulators may be used.

19 FUEL

For the full fuel specification please see back page.

20. WEIGHT

Warning : Cars can be weighed at any time before, during or after a meeting, without driver. They must always achieve the minimum weight; the adding of fuel or any other liquids is not allowed to achieve this minimum weight. The minimum car weight is **950kg**. The use of ballast to achieve this weight must be steel plate bolted to the floor.

The internal plating must be of equal proportions on both sides and front to rear of the car both in construction and gauge. I.E. If a 10Kg weight is fitted in the front offside foot well, a 10 Kg weight must also be fitted in the nearside foot well. Bolts of the same size and material must be used to fit the plates and the bolts must be welded.

21. TRANSPONDERS

(NOT REQUIRED)

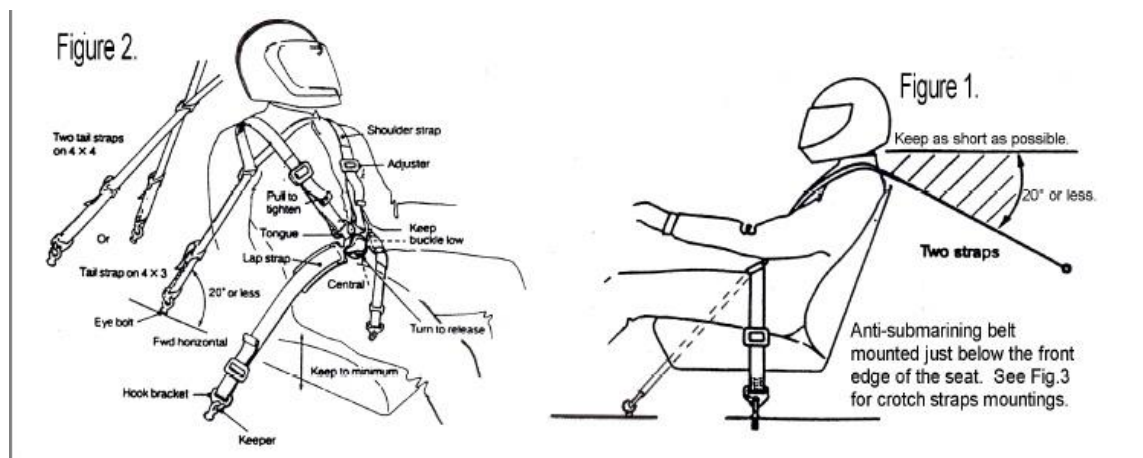
22. SAFETY EQUIPMENT

- Plastic, Polycarbonate or **Tri-Composite** helmets (i.e. British, European or Snell) of any type are not permitted.
- Helmets must be of a minimum standard as directed by British Oval Racing Safety Executive (B.O.R.S.E). These are BS6658/85 Type A, BS6658 Type A/FR, FIA8860-2004, Snell SA2000, Snell SA2005, SFI Foundation 31.1, SFI Foundation 31.2 or E2205 European Standard. It is important that

the helmet fits the driver correctly. Shatterproof goggles/visors must be worn although tinted visors are not advisable.

- Neck braces are recommended.
- Fireproof balaclavas are **MANDATORY** and must be marked appropriately.
- Fire retardant gloves are **MANDATORY** and must be marked appropriately. Drivers must wear bright coloured racing overall type clothing of flame retardant Proban or a high specification material and this must be maintained in a clean and tidy condition in view of the public. N.B. If wet weather clothing is used this must be worn IN ADDITION TO and NOT INSTEAD OF the regulation flame retardant overall type of clothing described above.
- A quick release cloth window net must be fitted to the driver's door window aperture. The netting should have holes not larger than 7.5cm or 3" wide. It should come down level with the steering wheel, and should be flexible and easily removable separate to the movement of the door.
- A 1Kg Dry Powder Gauge Fire Extinguisher is highly recommended and if fitted, this should be in a tube with a spring top and should be within easy reach of the driver. Old type BCF (green) type extinguishers are not allowed. All tow vehicles, must carry a minimum of a 2kg fire extinguisher dry powder or gas, which must be within easy reach of the driver and mechanics at all times, especially when refueling.
- A minimum of 3" (75mm) wide safety belts (1.75" (40mm) sub-strap) are mandatory. This must be a full five point buckle release harness (including NASCAR type) with sub-strap and must be fitted and bolted to the floor and/or the roll cage. Shoulder belts with a sternum protection latch are highly recommended. The substrap must be used at all times and all belts must connect to the quick release buckle. In the case of NASCAR lever latch buckles it is advisable to fit a secondary means of detent to prevent overall sleeves accidentally unhooking buckles during racing. A small section of Tubegrip elasticated bandage slid over the hooked buckle serves this purpose. Special attention must be paid to the condition of seat belts and fixings once fitted. An extra bar is to be fitted to roll cage behind drivers seat approx 4" below shoulder height of driver. Your seat belts may be fixed to this bar. The bar is to be of roll cage material specification.

Following recent research made by leading safety harness manufacturers, new information has been made available with regard to the best way to fit your safety harness, which will further ensure your safety. Please study the diagrams below to ensure your safety harness is fitted correctly.



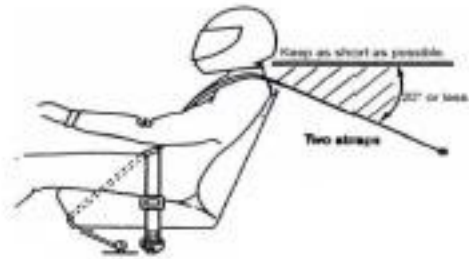
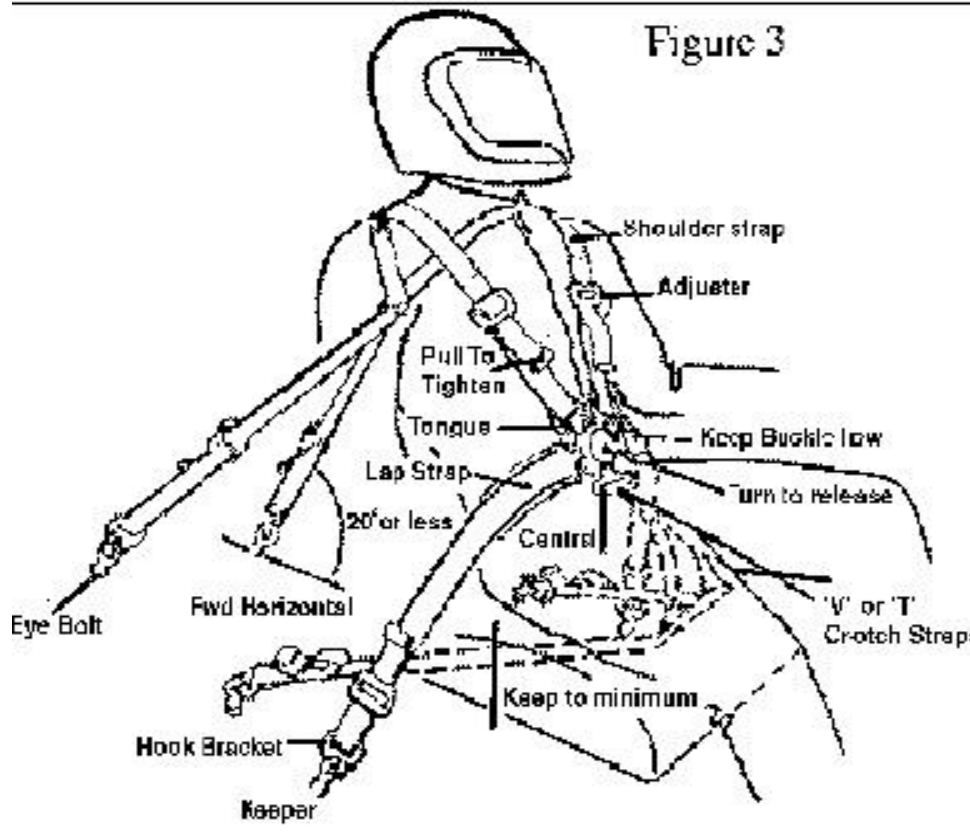


Figure 2



Please note that all of the above rules are subject to change in respect of Health & Safety requirements.

All Oval Racing Formulae

Permitted fuel specification from 1st January 2008 (this specification supersedes all previous specs).

1. All cars must only use fuel from roadside pumps as defined below.

Petrol (Motor Gasoline of the type on sale to the general public from roadside filling stations) BS 4040 (Leaded) Subject to a valid permit for use. LRG (Unleaded), BS EN 228 (Unleaded), BS7800 (Super Unleaded).

2. Petrol is a product refined from crude oil that contains a large number of identifiable compounds that can typically be 250 in number. These compounds can be identified and compared to the available petrol from major oil companies and suppliers.

3. Unless otherwise stated, or the distinction is made between leaded and unleaded petrol, major gasoline fuel shall meet the following; Acceptance levels for Octane numbers will be determined at 95% confidence level. Only additives to this motor gasoline fuel solely for the purpose of lead replacement are allowed.

4. Lead Replacement Gasoline, LRG, also known as LRP. Only additives from Sodium, Phosphorous, Potassium, or Manganese according to manufacturers recommendations are allowed. Note; Manganese can enhance octane values in any petrol. Under no circumstances will values in excess of 0.005 grams/litre be permitted.

Lead in excess of EU directive 98/70EC requirements is illegal.

5. We reserve the right to amend the detail of the above specification to reflect any change occurring in the quality of the fuel on sale to the general public at any time.

Roadside fuel consistency when testing fuel samples.

	BS EN 228	BS 7800	BS 4040	LRG/LRP	Test Standard
Motor Oct No (max)	89.0	89.0	89.0	89.0	ASTM D2700/86
Mon (min)	85.0	86.0	86.0	86.0	ASTM D2700/86
Research Oct No (max)	100.0	100.0	100.0	100.0	ASTM D2699/86
Ron (min)	95.0	97.0	97.0	97.0	ASTM D2699/86
Lead (max)	0.005	0.005	0.15		ASTM D3341 / IP362
Lead (min)	ASTM D3237	ASTM D3237		0.005	ASTM D3237 / D3341 / IP362
Density @ 15°	0.720 - 0.775	0.720 - 0.775	0.720 - 0.775	0.720 - 0.775	ASTM D1298/ D4052
Oxygen % max	2.7% w/w	2.7% w/w	2.7% w/w	2.7% w/w	Elemental
Nitrogen % max	0.1% w/w	0.1% w/w	0.1% w/w	0.1% w/w	ASTM D4629/ IP379
Benzene % max	1.0% v/v	1.0% v/v	1.0% v/v	1.0% v/v	EN238
Sulphur	150mg/kg	150mg/kg	150mg/kg	150mg/kg	EN ISO 14596 / ASTM D2622
Olefins*	18% v/v	18% v/v	18% v/v	18% v/v	ASTM D1319
Aromatics*	42% v/v	42% v/v	42% v/v	42% v/v	ASTM D1319

- Olefins and Aromatics values are expressed as a percentage of total fuel.